

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.





UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Agricultural Engineering  
MONTHLY NEWS LETTER

Vol. 3.

September 25, 1933

No. 3

.....  
: The Executive Council has recently sent the Depart- :  
: ment a communication directing that all executive and :  
: administrative agencies use the air mail for the transmission :  
: of all communications on which the greatest possible amount :  
: of speed is not needed in order to reduce the expense of :  
: communications. An example of the speed with which com- :  
: munications may be maintained by air between Washington :  
: and the principal cities in the country was given by showing :  
: that a letter air mailed from Washington at 3:20 p.m. will :  
: reach San Francisco at 11:55 a.m. the next day. This :  
: demonstrates that practically the air mail is often as :  
: speedy as night telegrams. Air mail is much less expensive :  
: than the telegraph, which offers a wide field for economy. :  
: .....

: It is suggested that each employee in charge of a :  
: field station familiarize himself with the air mail :  
: schedules with a view of using this method of communication :  
: in preference to the telegraph whenever possible. :  
: .....

In connection with the funds of the Public Works Administration allotted to the Department of Agriculture for buildings at the various experiment stations, this Bureau has been assigned the task of passing on all plans for such structures. George R. Boyd has been designated by the Secretary as contact representative of the Department at the Public Works Administration. M. C. Betts, assisted by a force of 18 engineers and draftsmen, is devoting the greater part of his time to the preparation of plans and specifications for buildings for several of the bureaus.

During September S. H. McCrory made a brief inspection of the work in progress at Toledo and in Minnesota.

Lewis A. Jones spent most of September inspecting the civilian conservation work in Mississippi Valley States. The work of the Wisconsin camps consisted principally of soil-saving dams 12 to 25 feet high, nearly all earth with drop type concrete culverts. In Minnesota, rubble masonry and notched log dams 3 to 6 feet high constituted the principal work. In North Dakota dams were built principally to conserve water. They were usually 15 to 20 feet high, and largely built of earth with natural or loose rock spillways. Some of them were as much as 600 feet long and impounded run-off from 2,000 to 3,000 acres. In Iowa the



principal effort had been on small brush dams, 2 to 3 feet high. Suggestions for improvement of the dams were made to the superintendent. Missouri had the best brush dams observed in any of the States. These were of the double post type up to 5 feet in height, well anchored in sides and bottoms of the gullies, brush and aprons wired firmly in place, and having adequate spillways. In most of the camps great improvement has been noted in quality of work as compared with the early work.

J. D. Parsons has been appointed engineer on emergency conservation work and assigned to the Louisville office. The Louisville engineering staff has prepared recommendations regarding winter work. F. O. Bartel accompanied by C. L. Hamilton also recently appointed, made several airplane flights over areas proposed for civilian conservation erosion work. The airplane afforded an excellent means of making rapid and suitable reconnaissance for this purpose.

H. H. Lester has been appointed engineer on civilian conservation work and assigned to New Orleans office to assist W. D. Ellison with work in the South. Mr. Ellison found that the camp at Gadsden, Ala. was constructing intercepting ditches to prevent water from mountains flowing over cultivated lands. He recommended discontinuing this work because of the great expense compared with benefit accomplished. Mr. Ellison located areas in Arkansas suitable for winter camps.

Three areas in Georgia were inspected by J. G. Sutton and approved as locations for winter conservation camp work.

A paper entitled "Brief Instructions on Methods of Gully Control" was completed by C. E. Ramser for use of civilian conservation workers. After leaving Washington Mr. Ramser inspected the northern erosion stations and conferred with engineers in charge regarding proposed public work projects. After working a few days in Guthrie he inspected the Texas soil erosion stations. He attended a meeting of Southern States emergency conservation supervisors in the District Forester's office in New Orleans. Messrs. Ramser and Ellison then accompanied the Texas supervisory staff to review the work done in Texas.

A tropical hurricane passed near Belle Glade, Florida, and during the storm 6 to 7 inches of rain fell. Railroads and highways suffered large damages and some pump houses were partially unroofed. Other tropical hurricanes passed close enough to the Houma, La. and Vineland, N. J. stations to cause heavy rains. G. A. Mitchell secured gagings of a creek near its maximum stage.

Plane table surveys of about 200 acres of the Bureau of Plant Industry farm at Beltsville and about 30 acres of the Food and Drug Administration tract located nearby have been completed by G. R. Shier. On the Beltsville farm F. E. Staebner and G. R. Shier have laid out some 5 miles of tile drains.

A group of 25 farmers and county agents from southern Kansas under the leadership of Mr. Glass, Kansas extension agricultural engineer visited the Guthrie station on August 22. These visitors all had several years experience with terraces on their farms in Kansas and were thoroughly sold on the value of this basic means of erosion control.

Plotting of all soil movement line data collected since the start of this work at Temple has been completed by H. O. Hill.



A. T. Holman reports that 11 inches of rain fell on the Bethany station during the month of August. This precipitation caused the largest run-off in the history of the station. Very complete records and data were obtained at all installations and should yield results of a very definite and conclusive nature.

The winter wheat harvest on the Pullman station has been completed with an average yield of 41 bushels per acre on the 39.4 acre area.

Computations of run-off and soil loss for the past season up to August 1, 1933, at Guthrie, as reported by G. E. Ryerson, showed a total loss of 34.3 tons per acre from the untterraced area as compared with 6.9 tons for terrace with a variable grade of 0 to 6 inches per 100 feet, 3.0 tons for a variable graded terrace with a grade of 0 to 3 inches per 100 feet, and 0.5 ton for a terrace with level grade.

F. E. Hardisty reports that on August 10 a severe washing rain of 2.41 inches fell at the Zanesville soil erosion station with maximum 5, 10 and 15 minute intensities of 4.8, 3.6, and 3.2 inches per hour. This rain was preceded by 0.60 of an inch of slow rain which saturated the surface of the soil. There was a large amount of run-off and soil washing and excellent records were obtained.

Field work on engineering and economic investigations being conducted in Imperial Valley, Calif., and in Lower Rio Grande Valley, Tex. has been practically completed. The field party working in Lower Rio Grande Valley experienced the two recent hurricanes that devastated that area.

An inspection of the proposed Columbia Basin Irrigation Project, Oregon, by Mr. Tugwell, Assistant Secretary of the Department of Agriculture, and his party, was made August 22, under the guidance of M. R. Lewis. The sites of the Grand Coulee dam in the Columbia River and of the Grand Coulee Reservoir were visited, as were also the Soap Lake and Ephraim-Quincy sections of the irrigable lands.

Irrigation of young citrus trees by means of tank wagons was observed by J. C. Marr while engaged in the economic survey of Lower Rio Grande Valley, Texas. It has been found that young orchards can be watered in this manner at a lower cost than would be the case if gravity water were used. One development company has 25 auto tank trucks which are used for this purpose.

A report on "Effects of Proposed Regulated Water Levels, Kootenai River, on Crop Production, Kootenai Valley Drainage Districts" was completed by L. T. Jessup, who presented testimony at the hearing before the International Joint Commission at Nelson, B. C. relative to the application of West Kootenay Power and Light Company to store water in Kootenay Lake.

Data on the relation of pest control operations to stressing of the trees by water shortage were obtained by Colin A. Taylor on two orchards in southern California. Two stressed plots in one of the orchards were fumigated August 8 by using a 120 per cent dosage which resulted in some damage to the weaker trees. On August 11, the stressed plots in the other orchard were fumigated and the dosage was reduced to 110 percent because of the generally weakened condition of the trees. No damage appeared to have resulted in the latter case.

The harvesting of tobacco from the cooperative fertilizer placement experiment at Marlboro, Md. was observed by W.H. Redit and



C. W. Brockseker. The yield was poor because of the heavy rains of 4 inches the latter part of July, which leached most of the fertilizer out of the sandy soil. The placement which received additional fertilizer as a side dressing after the rain was much better than the other. Some damage resulted from the tropical storm the latter part of August but it was not comparable to that resulting from the first rains.

R.B. Gray returned September 5 from an inspection trip wherein he visited all of the Division of Mechanical Equipment projects. He reports an excellent spirit manifested by all of the engineers in spite of the handicaps due to drastic curtailment of funds. On September 1 he viewed at Ames, Iowa, the demonstration of a furrow-damming attachment for a lister planter devised by Messrs Shedd and Schoenleber of the Bureau and Mr. Collins of Iowa Station. While at Ames Mr. Gray conferred with station chemists on the use of alcohol blends in automotive units. Their experience indicates favorable results with the blend.

E. M. Mervine reports that satisfactory progress is being made in the development of a hill planter for sugar beets. The size of the hill can be maintained under varying conditions of speed and depth of seed in the seed box and the hill can be placed in the ground in a desired manner. The optimum tonnage of beets seems to be obtained with a uniform stand of beets and the object of this planter is to get uniformity.

Harvester development work this year is confined to checking the results that will come from a new aluminum harvester built by the Great Western Sugar Co. of Denver and to an entirely new machine built by the Scott Viner Co. of Columbus, Ohio.

During the hay growing season thus far in Louisiana only one of the three private conveyor drier installations has been operated according to E.D. Gordon. Of the 5 rotary drum driers, one did not operate, although 2 of this type are used to dry sugar-cane bagasse during the cane grinding season.

A 40-foot extension is being added to the fertilizer machinery laboratory at Arlington Farm, Va. The extension will provide much-needed shop and storage space. Provisions are also being made for a new temperature and humidity control room in the laboratory.

A.L. Sharp left Washington Sept. 14 to conduct field studies in planting snap beans in Florida in connection with the fertilizer machinery project.

W. M. Hurst and W. R. Humphries have begun a series of tests on seed cleaners to determine the necessary machine adjustments or alterations for removing smut balls from seed wheat.

Fertilizer placement experiments with cotton, sugar beets, and potatoes at 16 locations recently inspected by G.A. Cumings show rather definite indications which largely substantiate the results of previous years. Fertilizer applied at time of planting in a band at each side of the row has to date been superior particularly with the large amounts of fertilizer applied to cotton and potatoes. "Bedding on" the fertilizer several days in advance of planting cotton seed is a common practice, and possible studies of fertilizer application in relation to various methods of bedding the land were discussed with J. W. Randolph at Auburn, Ala. Mr. Cumings also conferred with farm implement manufacturers at Moline and Chicago, and found that improvements in fertilizer attachments for potato, corn and cotton planters were in progress to meet the requirements indicated by the cooperative field experiments. A single-row, walking-type corn planter equipped with an improved device for placing the fertilizer in a band at each side of the row was recently placed on market. Attention is also being given by manufacturers to corrosion resistant metals and coatings, particularly for certain parts of fertilizer attachments.